COVID outbreak prediction using stacked LSTM

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Abstract

The COVID-19 pandemic has brought the world to a stand still and caused innumerable number of deaths. Many of these deaths have been caused due to unavalabilty of medical care and lack of management. This project aims to use four stacked LSTM models to predict the number of confirmed cases, deaths and cures from COVID. Building such a model would help the government and medical authorities to properly plan their resources to reduce the number of deaths. The dataset is collected from four countries namely India, USA, Czech Republic and Russia and provides information about the number of cases, deaths and cures on a day-to-day basis.

Proposed Study

Long Short Term Memories(LSTMs) can solve numerous tasks not solvable by previous learning algorithms for recurrent neural networks (RNNs). LSTM is applicable to tasks such as unsegmented, connected handwriting recognition, speech recognition and anomaly detection in network traffic. LSTMs can also be efficiently applied for time-series predictions. We can use a stacked LSTM network to predict the outbreak of coronavirus based on real world datasets which are analyzed using various parameters like day-wise number of confirmed cases, number of cured cases and death cases.

Data Source

This project will use the free available coronavirus dataset having information about the number of cases, number of deaths and number of recovered people. It will have additional information about countries in which the cases have occurred.

https://data.humdata.org/dataset/novel-coronavirus-2019-ncov-cases

Input

The input dataset will have information about the country, date and number of cases confirmed, number of deaths and people recovered on each date.

Output

The project will have three types of output.
1. It will predict the number of confirm coronas virus patients in the future
2. It will predict the number of deaths of patients due to coronavirus

3. It will predict the number of coronas virus who will recover from the disease in the future

Roles and Responsibilities

Literature review   Rimzim/Vijaylaxmi
Data Preprocessing   Gowri/Aditya
Architecture study   Rimzim/Vijaylaxmi
Model training   Gowri/Aditya
Visualization   Team